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STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99)	Art Unit		1656		
( Not for submission under 37 CFK 1.33)	Examiner Name	-Net-ye	34-809igned	Chih-Min	Kam
	Attorney Docket Numb	er	4408-P03626US0	0	

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/CMK/	2	4759928		1988-07	'-26	Gurusiddaiah			
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/CMK/	1	Anderson, B.F., et al., ('borrelidin: absolute cont Chem., 42:717-730.	Anderson, B.F., et al., (1989) "Crystal and molecular structures of two isomorphous solvates of the macrolide antibiotic borrelidin: absolute configuration determination by incorporation of a chiral solvent in the in the crystal lattice," Aust. J. Chem., 42:717-730.						
150cccccccccccccccccccccccccccccccccccc	2	Anderton, K., et al., (Ap	r. 17, 1965) "Some	structu	ral features of b	orrelidin, an anti-vira	al antibio	otic," Nature 206:269.	
000000000000000000000000000000000000000	3	Aparicio, J.F., et al., (19 hygroscopicus: analysis	Aparicio, J.F., et al., (1996) "Organization of the biosynthetic gene cluster for rapamycin in Streptomyces hygroscopicus: analysis of the enzymatic domains in the modular polyketide synthase," Gene 169:9-16.						
***	4	August, P.R., et al., (Fe analysis of the rif biosyr							
/CMK/	5	Beck, J.B., et al., (May a pikromycin modular poly					g size d	etermination in the	
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Examiner Name	Metwy	<del>tassigned</del>	Chih-MIn	Kam
Attorney Docket Numb	er	4408-P03626US00		

/CN	ЛK/	6	Berger, J., et al., (1949) "Borrelidin, a new antibiotic with anti-borrelia activity and penicillin enhancement properties," Arc. Biochem. 22:476-478.	
***************************************		7	Brautaset, T., et al., (May 23, 2000) "Biosynthesis of the polyene antifungal antibiotic nystatin in Streptomyces noursei ATCC 11455; analysis of the gene cluster and deduction of the biosynthetic pathway," Chem. Biol. 7:395-403.	
***************************************		8	Butler, A.R., et al., (Apr. 8, 1999) "Impact of thioesterase activity on tylosin biosynthesis in Streptomyces fradiae," Chem. Biol. 6:287-292.	
000000000000000000000000000000000000000		9	Caffrey, P., et al., (2001) "Amphotericin biosynthesis in Streptomyces nodosus: deductions from analysis of polyketide synthase and late genes," Chem. Biol. 8:713-723.	
000000000000000000000000000000000000000		10	Cheng, Y.Q., et al., (Mar. 18, 2003) "Type I polyketide synthase requiring a discrete acyltransferase for polyketide biosynthesis," Proc. Natl. Acad. Sci. USA. 100:3149-3154.	
000000000000000000000000000000000000000		11	Cortés J., et al., (Nov. 8, 1990) "An unusually large multifunctional polypeptide in the erythromycin producing polyketide synthase of Saccharopolyspora erythraea," Nature 348:176-178.	
500000000000000000000000000000000000000		12	Cortés, J., et al., (Jun. 9, 1995) "Repositioning of a domain in a modular polyketide synthase to promote specific chain cleavage," Science 268:1487-1489.	
0.0000000000000000000000000000000000000		13	Cortés, J., et al., (2002) "Identification and cloning of a type III polyketide synthase required for diffusible pigment biosynthesis in Saccharopolyspora erythraea," Mol. Micro. 44:1213-1224.	
000000000000000000000000000000000000000		14	Dickinson, L., et al., (Apr. 17, 1965) "Anti-viral activity of two antibiotics isolated from a species of Streptomyces," Nature 206:265-268.	
4	/	15	Donadio, S., et al., (May 3, 1991) "Modular organization of genes required for complex polyketide biosynthesis," Science 252:675-679.	
/CM	IK/	16	Donadio, S., et al., (1993) "An erythromycin analog produced by reprogramming of polyketide synthesis," Proc. Nat. Acad. Sci. USA 90:7119-7123.	

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/CMK/	17	Duffey, M.O., et al., (2003) "Enantioselective total synthesis of borrelidin," J. Am. Chem. Soc. 125:1458-1459.	
	18	Eastwood, E.L., et al., (2003) "Borrelidin induces the transcription of amino acid biosynthetic enzymes via a GCN4-dependent pathway," Bioorg. Med. Chem. Lett. 13:2235-2237.	
000000000000000000000000000000000000000	19	Fernandez, E., et al., (Sep. 1998) "Identification of two genes from Streptomyces argillaceus encoding glycosyltransferases involved in transfer of a disaccharide during the biosynthesis of the antitumor drug mithramycin," J. Bacteriol. 180:4929-4937.	
***************************************	20	Floss, H.G. (2001) "Antibiotic biosynthesis: from natural to unnatural compounds," J. Ind. Micro. Biotech. 27:183-194.	
000000000000000000000000000000000000000	21	Fouces, R., et al., (1999) "The tylosin biosynthetic cluster from Streptomyces fradiae: genetic organization of the left region," Microbiol. 145:855-868.	
	22	Gaisser, S., et al., (2000) "A defined system for hybrid macrolide biosynthesis in Saccharopolyspora erythraea," Mol. Microbiol. 36:391-401.	
000000	23	Gaisser, S., et al., (2002) "Engineered biosynthesis of novel spinosyns bearing altered deoxyhexose substituents," Chem. Commun. 618-619.	
\$3000000000000000000000000000000000000	24	Gaitatzis, N., et al., (Apr. 12, 2002) "The biosynthesis of the aromatic myxobacterial electron transport inhibitor stigmatellin is directed by a novel type of modular polyketide synthase," J. Biol. Chem. 277:13082-13090.	
600000000000000000000000000000000000000	25	Hanessian, S., et al., (2003) "Application of conformation design in acyclic stereoselection: total synthesis of borrelidin as the crystalline benzene solvate," J. Am. Chem. Soc. 125:13784-13792.	
•	26	Bantleon, R., et al. (Apr. 1994) "Chloroperoxidase from Streptomyces lividans: Isolation and characterization of the enzyme and the corresponding gene," J. Bact. 176(8):2339-2347	
/CMK/	27	Hunziker, D., et al., (1998) "Primer unit specificity in rifamycin biosynthesis principally resides in the later stages of the biosynthetic pathways," J. Am. Chem. Soc. 120:1092-1093.	

Application Number		10534210			
Filing Date		2006-03-17			
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Attorney Docket Numb	er	4408-P03626US	00		

/CM	IK/	28	Kawamura, T., et al., (Aug. 2003) "Anti-angiogenesis effects of borrelidin are mediated through distinct pathways: Threonyl-tRNA synthetase and caspases are independently involved in suppression of proliferation and induction of apoptosis in endothelial cells," J. Antibiot. 56:709-715.	
0,0000		29	Kuhstoss, S., et al., (1996) "Production of a novel polyketide through the construction of a hybrid polyketide synthase," Gene 183:231-236.	
200000000000000000000000000000000000000		30	Lozano, M.J., et al., (Feb. 4, 2000) "Characterization of two polyketide methyltransferases involved in the biosynthesis of the antitumor drug mithramycin by Streptomyces argillaceus," J. Biol. Chem. 275:3065-3074.	
000000000000000000000000000000000000000		31	Maehr, H., et al., (Oct. 1987) "Identity of borrelidin with treponemycin," J. Antibiot. 40:1455-1456.	
000000000000000000000000000000000000000		32	Marsden, A.F.A., et al., (1998) "Engineering broader specificity into an antibiotic-producing polyketide synthase," Science 279:199-202.	
		33	Moore, B.S., et al., (2001) "Discovery of a new bacterial polyketide biosynthetic pathway," Chembiochem. 2:35-38.	
***************************************		34	Olano, C., et al., (2003) "Evidence from engineered gene fusions for the repeated use of a module in a modular polyketide synthase," Chem. Commun. 2780-2782.	
000000000000000000000000000000000000000		35	Oliynyk, M., et al., (1996) "A hybrid modular polyketide synthase obtained by domain swapping," Chem. Biol. 3:833-839.	
0,0000000000000000000000000000000000000		36	Otani, A., et al., (Jan. 8, 2002) "A fragment of human TrpRS as a potent antagonist of ocular angiogenesis," Proc. Nat. Acad. Sci. USA 99:178-183.	
	ø	37	Otoguru, K., et al., (Aug. 2003) "In vitro and in vivo antimalarial activities of a non-glycosidic 18-membered macrolide antibiotic, borrelidin, against drug-resistant strains of Plasmodia," J. Antibiot. 56:727-729.	
/CMI	K/	38	Pacey, M.S., et al., (Nov. 1998) "Novel erythromycins from a recombinant Saccharopolyspora erythraea strain NRRL 2338 plG1 I. Fermentation, isolation and biological activity," J. Antibiot. 51:1029-1034.	

Application Number		10534210			
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Art Unit		1656			
Examiner Name	Notry	<del></del>	Chih-Min	Kam	
Attorney Docket Number		4408-P03626US00			

/CMK	39	Paetz, W., et al., (1973) "Biochemical and immunological characterization of threonyl-tRNA synthetase of two borrelidin-resistant mutants of Escherichia coli K12," Eur. J. Biochem. 35:331-337.	
	40	Quiros, L.M., et al., (1998) "Two glycosyltransferases and a glycosidase are involved in oleandomycin modification during its biosynthesis by Streptomyces antibioticus," Mol. Microbiol. 28:1177-1185.	
000000000000000000000000000000000000000	41	Raibaud, A., et al., (Jul. 1991) "Nucleotide sequence analysis reveals linked N-acetyl hydrolase, thioesterase, transport, and regulatory genes encoded by the bialophos biosynthetic gene cluster of Streptomyces hygroscopicus," J. Bacteriol. 173:4454-4463.	
200000000000000000000000000000000000000	42	Ranganathan, A., et al., (Sep. 14, 1999) "Knowledge-based design of bimodular and trimodular polyketide synthases based on domain and module swaps: a route to simple statin analogues," Chem. Biol. 6:731-741.	
000000000000000000000000000000000000000	43	Reeves, C.D., et al., (2001) "Alteration of the substrate specificity of a modular polyketide synthase acyltransferase domain through site-specific mutations," Biochemistry 40:15464-15470. (7 sheets).	
(0000000000000000000000000000000000000	44	Rowe, C.J., et al., (2001) "Engineering a polyketide with a longer chain by insertion of an extra module into the erythromycin-producing polyketide synthase," Chem. Biol. 8:475-485. (11 sheets)	
000000000000000000000000000000000000000	45	Rudd, B.A.M., et al., (Aug. 12-18, 1990) "The biosynthesis of a family of novel antiparasitic macrolides," Proceedings of the 6th International Symposium on the Genetics of Industrial Microorganisms. Strausbourg, France. Abstract A70. p.96. ISBN 2-87805-004-5. (and 2 additional sheets)	
0.0000000000000000000000000000000000000	46	Schwecke, T., et al., (Aug. 1995) "The biosynthetic gene cluster for the polyketide immunosuppressant rapamycin," Proc. Nat. Acad. Sci. USA 92:7839-7843.	
000000000000000000000000000000000000000	47	Shaw-Reid, C.A., et al., (May 20, 1999) "Assembly line enzymology by multimodular nonribosomal peptide synthetases: the thioesterase domain of E. coli EntF catalyzes both elongation and cyclolactonization," Chem. Biol. 6:385-400.	
×	48	Silakowski, B., et al., (2001) "Novel features in a combined polyketide synthase/non-ribosomal peptide synthetase: the myxalamid biosynthetic gene cluster of the myxobacterium Stigmatella aurantica Sga15," Chem. Biol. 8:59-69.	
/CMł	49	Singh, S.K., et al., (Feb. 1985) "Treponemycin, a nitrile antibiotic active against Treponema hyodysenteriae," Antimicrob. Agents Chemother. 27:239-245.	

Application Number		10534210	
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Attorney Docket Number		4408-P03626l	JS00

/CMK/	50	Swan	Swan, D.G., et al., (1994) "Characterization of a Streptomyces antibioticus gene encoding a type I polyketide synthase which has an unusual coding sequence," Mol. Gen. Genet. 242:258-362.						
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